

## REMARKS

As discussed below, Applicants have amended Claim 6 to limit the compounds of component (b) to the triazoles of formula (IV-a) (i.e., triadimenol), (IV-b) (i.e., tebuconazole), or (IV-c) (i.e., prothioconazole) and have accordingly amended Claim 7 to recite only the relevant weight ratio ranges. The amended claims remain fully supported in the specification.

### Restriction Requirement under 35 U.S.C. 121

The Office Action requires restriction to one of the following groups:

- Group I: Claims 6-9, drawn to a fungicidal composition and method wherein compound of formula (I) is combined with carboxamides (b)(1), (b)(8), and (b)(9)
- Group II: Claims 6-9, drawn to a fungicidal composition and method wherein compound of formula (I) is combined with strobilurins (b)(2)
- Group III: Claims 6-9, drawn to a fungicidal composition and method wherein compound of formula (I) is combined with triazoles (b)(3)
- Group IV: Claims 6-9, drawn to a fungicidal composition and method wherein compound of formula (I) is combined with phenylurea (b)(4)
- Group V: Claims 6-9, drawn to a fungicidal composition and method wherein compound of formula (I) is combined with chlorophthalide (b)(5)
- Group VI: Claims 6-9, drawn to a fungicidal composition and method wherein compound of formula (I) is combined with hydrazine (b)(6)
- Group VII: Claims 6-9, drawn to a fungicidal composition and method wherein compound of formula (I) is combined with benzothiazole (b)(7)
- Group VIII: Claims 6-9, drawn to a fungicidal composition and method wherein compound of formula (I) is combined with quinolone (b)(10)
- Group IX: Claims 6-9, drawn to a fungicidal composition and method wherein compound of formula (I) is combined with dithiolane (b)(11)
- Group X: Claims 6-9, drawn to a fungicidal composition and method wherein compound of formula (I) is combined with phosphorus compound (b)(12)
- Group XI: Claims 6-9, drawn to a fungicidal composition and method wherein compound of formula (I) is combined with iminoglycine (b)(13)



For groups such as I, II, and III in which the component (b) encompasses more than one specific compound, the Office Action also requires an election of a single disclosed species from the elected group for the purpose of initial examination.


Applicants elect Group III of the Office Action, which includes Claims 6-9 in which the compound of formula (I) is combined with the triazoles triadimenol, tebuconazole, or prothioconazole. Applicants have amended their claims in accordance with this election but reserve the right to file one or more divisional applications directed to the non-elected subject matter.

Applicants also elect the species represented by the compound of formula (I) combined with prothioconazole of formula (IV-c). Applicants note by way of comment that their specification includes test data in Table 2 of Example 2 (see substitute specification at pages 28-30, particularly page 30) showing unexpectedly enhanced fungicidal activity of mixtures of the compound of formula (I) and prothioconazole. This election is without traverse to the extent that it is understood that (a) the restriction requirement will be withdrawn upon the finding of an allowable genus and (b) any species withdrawn from consideration will be transferred to the elected subject matter unless it is found patentably distinct from the elected or allowed claims. Applicants note with respect to the species election that triadimenol, tebuconazole, and prothioconazole are all triazole fungicides (also known as conazole fungicides) that operate by the same sterol biosynthesis inhibition mode of action. See, for example, the classification charts available online at the Fungicide Resistance Action Committee web site at <http://www.frac.info/frac/index.htm> under the heading "2009 FRAC Mode of Action Poster" (low resolution copy of which is attached for the convenience of the Examiner). Applicants therefore request that embodiments in which component (b) can be triadimenol, tebuconazole, and prothioconazole be joined for examination.



In view of the preceding amendments and remarks, allowance of the claims is respectfully requested.

Respectfully submitted,

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Q:patents/prosecution documents/cs8726/8726 amendment 1-18-10



# Mode of Action of Fungicides

## A: Nucleic Acid Synthesis

[illegible]

### B: Mitosis and Cell Division

**B1:  $\alpha$ -tubulin assembly in mitosis**  
# 1: ABC transporter (p. 60) *Proteomics* (Ch. 5, 18, annex 1)

**B2:  $\alpha$ -tubulin assembly in mitosis**  
# 2: *Proteomics* (Ch. 5, 18, annex 1)

**B3:  $\alpha$ -tubulin assembly in mitosis**  
# 22: *Molecular Biology*








**B4: cell division (prop.)**  
# 19: *Proteomics*

**B5: degradation of nucleotide-binding proteins**  
# 4: *Cell Biochem.*







### C: Respiration

[illegible]

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<p><b>C1: inhibition of complex I</b>  <b>NADH Oxidoreductase</b>          6-21 pyrimidinolactones</p>  <p>Structure</p>	<p><b>C2: inhibition of complex II</b>  <b>cytochrome b5 reductase</b>          6-27 0-10 pyrazoles, 1,2,4-triazoles, 1,3,4-oxadiazoles</p>  <p>Structure</p>	<p><b>C3: inhibition of complex III</b>  <b>cytochrome bc1 complex</b>          6-28 0-10 pyrazoles, 1,2,4-triazoles, 1,3,4-oxadiazoles</p>  <p>Structure</p>	<p><b>C4: inhibition of complex IV</b>  <b>cytochrome c oxidase</b>          6-29 0-10 pyrazoles, 1,2,4-triazoles, 1,3,4-oxadiazoles</p>  <p>Structure</p>	<p><b>C5: uncouplers of oxidative phosphorylation</b>          6-30</p>  <p>Structure</p>	<p><b>C6: inhibition of ATP synthase</b>          6-31</p>  <p>Structure</p>	<p><b>C7: ATP production (prop.)</b>          6-32 0-10 pyrazoles, 1,2,4-triazoles, 1,3,4-oxadiazoles</p>  <p>Structure</p>
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### D: Amino Acid and Protein Synthesis

<p><b>D1:</b> protein synthesis</p> <p>8.21.1991 (starting at 10:00 AM)</p>  <p>1000000000</p>	<p><b>D5:</b> protein synthesis</p> <p>8.21.1991 (starting at 10:00 AM)</p>  <p>1000000000</p>
<p><b>D2:</b> protein synthesis</p> <p>8.21.1991 (starting at 10:00 AM)</p>  <p>1000000000</p>	<p><b>D6:</b> protein synthesis</p> <p>8.21.1991 (starting at 10:00 AM)</p>  <p>1000000000</p>
<p><b>D3:</b> methionine biosynthesis (top gene) (top)</p> <p>8.21.1991 (starting at 10:00 AM)</p>  <p>1000000000</p>	<p><b>D7:</b> methionine biosynthesis (top gene) (top)</p> <p>8.21.1991 (starting at 10:00 AM)</p>  <p>1000000000</p>

### E: Signal Transduction

[illegible]

## F: Lipid and Membrane Synthesis

**F2: phospholipid biosynthesis**  
9-*N*-acetylneuraminic acid synthetase  
*S. aureus*

**F3: lipid peroxidation (prop.)**  
8-16 *n*-alkyl hydrocarbons, 2-hydroxyoctadecanoic acid  
*S. aureus*

**F4: cell membrane permeability**  
fatty acids (prop.)  
7-12 carbons  
*S. aureus*

**F5: phospholipid biosynthesis and cell wall deposition (prop.)**  
4-6 C-alkylamides (propyl, 2-pyridyl)  
*S. aureus*

**F6: microbial disrupter of pathogen cell membranes**  
2-alkyl-2,4-dichloro-1,3-butadiene  
R=CH<sub>3</sub>, CH<sub>3</sub>(CH<sub>2</sub>)<sub>10</sub>

### G: Sterol Biosynthesis in membranes

**G1: Sterol Biosynthesis Inhibitor (SBI) class I: DMG fungicides**  
**AC14 demethylase (erg11p1)**  
 • 1,2-epoxidation, 14α-OH removal (14)

**G2: SBI class II: Anilines**  
**Δ<sup>14</sup>-reductase (erg2p) and Δ<sup>2</sup>-Δ<sup>3</sup>-isomerase (erg3p)**

**G3: SBI class III: hydroxyenilides**  
**Δ<sup>2</sup>-keto reductase**  
 In 1,2-epoxidation  
 • 1,2-epoxide removal (14)




**G4: SBI class IV: squalene epoxidase**  
**• 11**

The diagram illustrates the sterol biosynthesis pathway, starting from Acetyl-CoA and proceeding through various intermediates to the final product, Sterol. The pathway is divided into several stages, with specific enzymes and inhibitors indicated. The inhibitors are categorized into four classes: G1 (Sterol Biosynthesis Inhibitor, SBI class I: DMG fungicides, AC14 demethylase (erg11p1)), G2 (SBI class II: Anilines, Δ<sup>14</sup>-reductase (erg2p) and Δ<sup>2</sup>-Δ<sup>3</sup>-isomerase (erg3p)), G3 (SBI class III: hydroxyenilides, Δ<sup>2</sup>-keto reductase, In 1,2-epoxidation, 1,2-epoxide removal (14)), and G4 (SBI class IV: squalene epoxidase, • 11). Arrows indicate the specific points of inhibition for each class.

### I: Melanin Synthesis in Cell Wall

[illegible]

**P: Host Defence Inducer**

<p><b>P1: allylic pathway</b>  <math>\Delta</math> p: heat delivery mechanism</p>  <p>mechanism  <math>\Delta</math> p: heat delivery mechanism</p>	<p><b>P2: allylic mechanism</b>  <math>\Delta</math> p: heat delivery mechanism</p>  <p>mechanism  <math>\Delta</math> p: heat delivery mechanism</p>	<p><b>P3: proposed</b>  <math>\Delta</math> p: heat delivery mechanism</p>  <p>mechanism  <math>\Delta</math> p: heat delivery mechanism</p>
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**M: Multi Site Action**

Chemical structures of various compounds, including substituted benzene rings, alcohols, and esters, labeled with numbers 1 through 10.

## Unknown Mode of Action

[illegible]

### U: Recent Molecules\*

new series of poly(2-vinylpyridine-co-vinylidene fluoride) copolymers

NC : Not Classified

the 1980s, the system will be able to handle a much wider range of languages.

## C: Respiration

[illegible]